TOP SECRET

ILLEGIB

25X1

25X1A

HANDLE VIA
CONTROL SYSTEM ONLY

25X1A

25X1A

USIB-D-41.15/74
(COMOR-D-13/52-2)
3 January 1966
Limited Distribution

UNITED STATES INTELLIGENCE BOARD

MEMORANDUM FOR THE UNITED STATES INTELLIGENCE BOARD

SUBJECT : Reconnaissance Resources for Crisis Management Situations

REFERENCE : USIB-D-41.15/72 (COMOR-D-48/104)
4 June 1965, Limited Distribution

1. The enclosed memorandum from the Director, National Reconnaissance Office (NRO) on the subject in response to above reference is circulated for information of the United States Intelligence Board (USIB).

2. This item is being scheduled for discussion at the USIB meeting on 6 January 1966.

3. It is suggested that, following Board discussion, USIB refer the attached memorandum to the Committee on Overhead Reconnaissance (COMOR) for study and comment to the Board.

25X1A

Executive Secretary

Enclosure

NRO review(s) completed.

25X1A

HANDLE VIA
CONTROL SYSTEM ONLY

Copy 1

25X1A

25X1

TOP SECRET

25X1A

TOP SECRET

[redacted]

25X1

Enclosure
USIB-D-41.15/74
(COMOR-D-13/52-2)
3 January 1966
Limited Distribution

25X1A

HANDLE VIA [redacted]
CONTROL SYSTEM ONLY

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE ASSISTANT SECRETARY

January 3, 1966

MEMORANDUM FOR: Chairman, United States Intelligence Board

SUBJECT: Reconnaissance Resources for Crisis Management Situations

REFERENCE: USIB-D-41.15/72

In the referenced document, the United States Intelligence Board requested that the National Reconnaissance Office advise the Board as soon as practicable on the results of its studies toward increasingly advantageous [redacted] capabilities and plans for speeding up processing and film handling. This request was pointed toward meeting the needs of the United States Government in critical international situations.

25X1D

In responding to this request, the NRO is doing so in the light of the framework in which the subject of crisis management has been cast in previous Board discussions--namely, periods of international tension of some duration during which photographic reconnaissance might provide information of critical importance for policy decisions.

Over the past six months, several informal discussions on this subject have taken place between the NRO Staff and the COMOR. As a result, the NRO has evaluated all reconnaissance assets available now and in the near future which might be employed for crisis management purposes. Attached is a paper which briefly summarizes the characteristics, limitations, and program status of all satellite, aircraft, and drone reconnaissance systems in this category.

25X1A

With regard to satellites, except for the use of CORONA (KH-4) as a means of providing coverage of those indications targets [redacted] near-term prospects are not good. [redacted]

25X1D

25X1
NRO

25X1A [redacted]

HANDLE VIA [redacted]
CONTROL SYSTEM ONLY

25X1A

25X1A [redacted]

25X1

Enclosure
USIB-D-41.15/74
(COMOR-D-13/52-2)
3 January 1966
Limited Distribution

[redacted]

The KH-4 program, because of its maturity, is in a much better position to be employed in crisis situations.

[redacted]

to the Board, in conjunction with a regular launch in the next few months, I plan to test the reaction capability of the KH-4 and the processing/production facilities in a simulated crisis situation. Unfortunately, as noted previously, the resolution of the KH-4 is not adequate to provide a majority of the information needed.

I am sure the Board will agree that it and the NRO should together insure that plans are in effect to take maximum advantage of the [redacted] KH-4 capabilities. The COMOR has provided targeting for the use of [redacted] and ~~I am advised that~~ these targets are kept constantly under review in order to advise the NRO of any change. I am also advised that COMOR is indicating which of these targets might usefully be covered by the KH-4 if the situation demanded that both the KH-4 and [redacted] be used simultaneously to collect information at a given point in time.

With regard to aircraft systems, the Board is well aware of the uses which could be made of the U-2 and the BLUE SPRINGS drones in crisis situations, particularly in those areas where present air defense capabilities permit. The OXCART aircraft will shortly be available for emergency situations which might arise in China and Southeast Asia. However, the use of the OXCART over the USSR when it achieves full operational capabilities poses certain problems, not so much in terms of its ability to survive, but rather in terms of its political impact. In some circumstances its use might exacerbate unpredictably the tense situation pertaining at a time of international crisis.

In addition, there is the SAC version of the OXCART, namely, the SR-71, which will shortly become an available national asset.

There are two other photographic assets under development which would be of importance in covering crisis situations in certain areas, particularly, China and Southeast Asia. I refer to the TAGBOARD drone which will operate at high altitudes at [redacted] 25X1A This vehicle, which is launched from a modified OXCART aircraft, should be operational by late CY 1966. The Department of Defense is also purchasing advanced subsonic drones known as the 147-H which will be available by mid-1966, and is contemplating an even more advanced subsonic drone for use in CY 1968.

25X1D The NRO has under active study and feasibility investigation [redacted] photographic readout satellite systems as a part of the NRP. Also, as a means of reducing the time of receipt of information after photography has been collected, the NRO is investigating the feasibility of installing an in-flight processing and exploitation capability in a KC-135 aircraft. This would permit a saving of many hours after the retrieval of either a manned aircraft or a satellite photographic package.

In summary, in consideration of the foregoing and the attachment, several points seem clear. Neither the existing satellite, aircraft, or drone systems nor those currently in development have the desired truly quick-reaction capability to deal properly with rapidly changing international situations. Aside from considerations of quick reaction, no single system available or contemplated is capable of doing the total crisis management task. Collectively, there is a substantial national collection capability on hand and/or projected for the near term which could be employed in an emergency.

The NRO will continue to improve the capabilities of all systems for use in crisis situations, including the reduction of time from retrieval of aircraft and satellite product to delivery of findings to national authorities. Additionally, greater emphasis will be placed on investigations leading toward quicker reacting photographic satellite

Enclosure
USIB-D-41.15/74
(COMOR-D-13/52-2)
3 January 1966
Limited Distribution

25X1

systems (i.e., readout)

25X1
NRO

Alexander H. Flax
Director
National Reconnaissance Office

Attachment
Assets for Crisis Management

cc: Ch/COMOR

Next 1 Page(s) In Document Exempt

Approved For Release 2003/04/23 : CIA-RDP79B01709A002300010041-2

25X1A [redacted] 25X1

HANDLE VIA [redacted]
CONTROL SYSTEM ONLY

Attachment to
Enclosure
USIB-D-41.15/74 25X1D
(COMOR-D-13/52-2)

[redacted]

Where KH-4 resolution is adequate to provide the desired information, the CORONA program is in an excellent position to respond to crisis management requirements. Approximately 5-6 systems are continually maintained at R-38, or less, days from launch. One CORONA system is always maintained at an R-7 to R-9 status, even on the launch date of another CORONA. In an emergency, it is estimated that CORONA systems could be maintained on orbit for approximately 60 consecutive days (barring catastrophic failures during launch or shortly after injection into orbit), returning a "bucket" of film each five days. 25X1A

On the debit side in a crisis management role, the CORONA has several characteristics which limit or hinder its effectiveness. These limitations, plus plans to improve system capabilities, are: ILLEGIB

1. The present J-1 CORONA provides about 10 foot resolution at nadir, varying occasionally in consistency. With the introduction of the J-3 model in early 1967, the KH-4 is expected to be more consistent (less random vibration-induced smear), and to have the capability to provide 8 foot resolution by orbiting at lower altitudes (perigee at approximately 80 miles which is not possible with the present KH-4).

2. The present CORONA can be held at R-1 for approximately 7 days; however, by preparing two systems simultaneously and recycling their count-downs in a complementary fashion an almost continuous R-1 capability can be maintained.

3. A completely new orbit and camera program can be placed in the CORONA system at R-9. There are no plans to improve on this capability since major development efforts would be involved.

4. At the present time, CORONA camera program options for each revolution are preset in the vehicle prior to launch; then, when on orbit, any one of ten alternative operations for each revolution

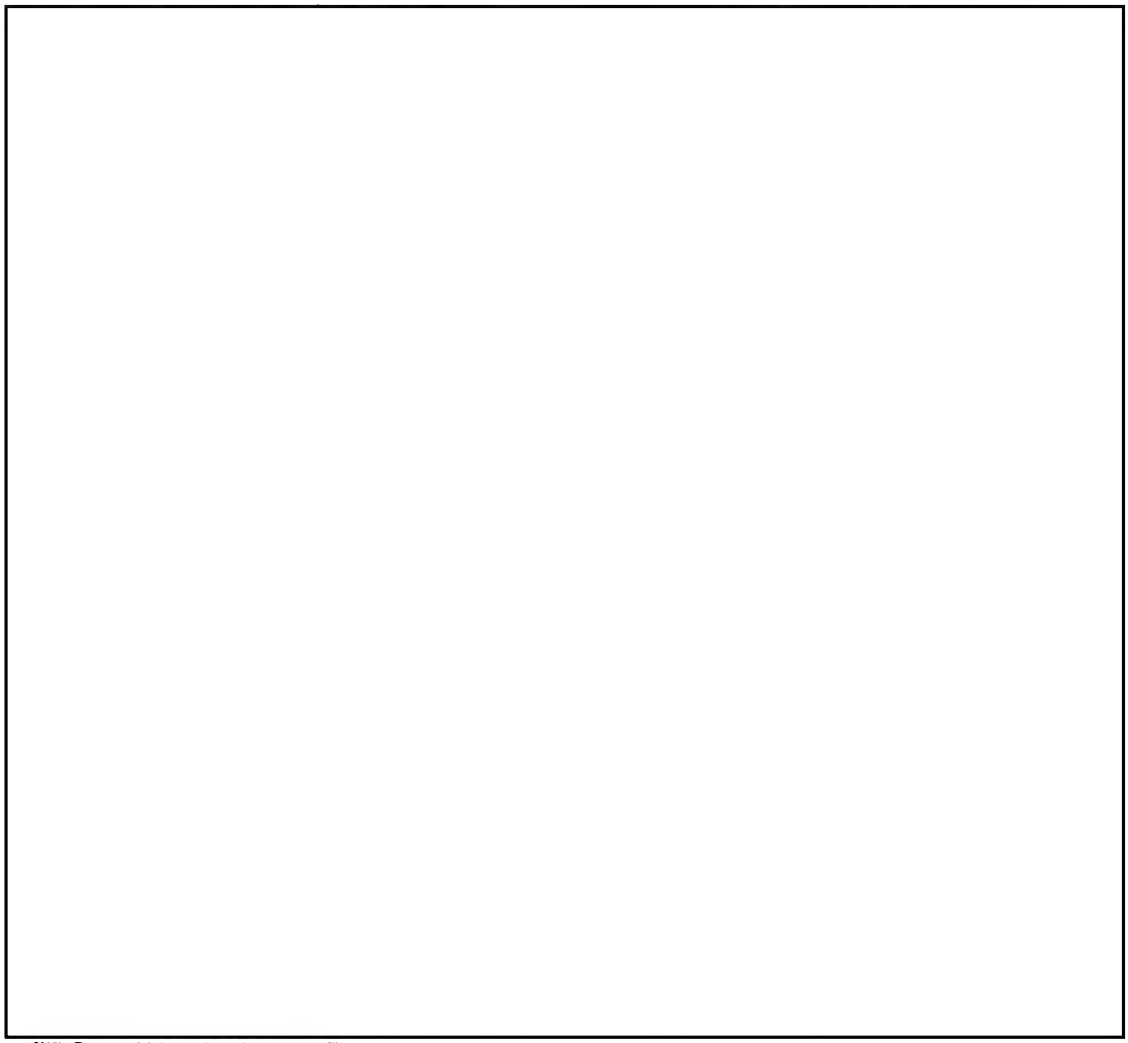
25X1A [redacted]

25X1A [redacted] 25X1

25X1A

HANDLE VIA [redacted]
CONTROL SYSTEM ONLY

may be selected by the NRO. A more flexible camera programmer which permits additional alternatives will be available in 1967. 25X1D



AIRCRAFT SYSTEMS:

Depending on the area to be covered, the U-2 (IDEALIST) aircraft has considerable potential as a crisis management system. It is basically a simple airplane system and easy to maintain. It can be kept on ready alert for extended time periods; and when in this posture, a mission launch can take place approximately 2 1/2 hours

25X1D

25X1A

[redacted]

tion

[redacted]

vulnerability to the increased air defense capability. The IDEALIST aircraft flies sufficiently high [redacted] to minimize the interceptor aircraft threat, but is vulnerable to SA-2 missile systems. Electronic countermeasures equipments for protection against both the aircraft and missile threats are installed. While these equipments enhance U-2 survivability, they are not completely effective. Thus, some constraints must be imposed in selecting flight paths in heavily defended target areas.

25X1D

At the present time, there are twenty U-2 aircraft which could be used in crisis management situations. Nine of these are assigned to CIA, eleven to SAC. The SAC aircraft have slightly less capability in operational altitude and in electronic equipment; however, a modification program is under way to up-grade these aircraft so that all twenty U-2 aircraft will have like configuration for world-wide employment.

The A-12 (OXCART) aircraft offers a high potential for crisis management. This aircraft is in the final stage of test and development, with operational utilization scheduled for early 1966. The reaction time for the A-12 aircraft is not as fast as that of the U-2. As with the U-2, the OXCART flight paths which can be selected are highly flexible although less adaptable to last minute and/or in-flight changes. Flight paths will normally be pre-selected and programmed in the aircraft guidance computer. The high speed of the aircraft does not permit a wide range of in-flight pilot options in target selection, and changes will be made more on the basis of external advice rather than on pilot observations.

25X1A

[redacted]

There are eight A-12 aircraft in the operational configuration. In addition, two aircraft are being used for continued testing and one two-seat version is being used for training. These latter three are not readily adaptable to operational missions. There are no plans to buy additional OXCART aircraft.

25X1D

[redacted]

25X1D

25X1D

SAC will receive [redacted] operational [redacted] aircraft. Six additional aircraft have been manufactured for the test program. Delivery of the first operational aircraft to Beale Air Force Base, California, is scheduled for January 1966. A limited operational capability will be available by May 1966 and a full capability by October 1966. No additional buys of [redacted] aircraft are anticipated at this time.

25X1D

25X1A

[redacted]

25X1A 25X1

[redacted]

[redacted] 25X1A

HANDLE VIA [redacted] 25X1A
CONTROL SYSTEM ONLY

DRONE SYSTEMS:

In addition to the aircraft programs, there are two drone programs which could be used for crisis management. The 147 series drones have been employed in operational missions since August 1964. 25X1D

[redacted]

The main disadvantages of the drone are the inability to alter the pre-programmed flight path, the restricted total photographic coverage, and the drone vulnerability. The flight path could be controlled manually by the DC-130 launch aircraft, but this technique would jeopardize the "mother ship" in most areas of operation. The technique could be used in an area such as Cuba where the launch aircraft could "stand off" while controlling the drone or pass control to another DC-130 on the other side of the island.

Vulnerability of the drone in heavily defended areas is a problem -- it is vulnerable to both MIG's and surface-to-air (SA-2) missiles. However, the small size of the drone makes it a difficult radar target and ground controlled positioning of the interceptor aircraft for a zoom climb maneuver is quite difficult. Most losses to MIG aircraft are believed to have occurred as a result of visual acquisition due to the tell-tale condensation trail. A contrail suppression system will be installed in all drones beginning early in 1966. 25X1D

[redacted] 25X1A

HANDLE VIA [redacted]
CONTROL SYSTEM ONLY

[redacted] 25X1A 25X1A 25X1

25X1A

[redacted] 147-G drones were purchased. [redacted] have been lost on operational missions. [redacted] low-level drones were ordered; one has been lost on a test mission. [redacted] 147-H drones have been ordered. Attrition of these is expected by the second quarter of 1967. A study is in progress to determine the size of the increased 147-H production requirement.

25X1A
25X1A
25X1A
25X1D

[redacted]

The TAGBOARD system is presently in development. We anticipate the first test and development launch to occur in January 1966. Six TAGBOARD's have been purchased for the test program. Fourteen have been ordered for operational use. An additional purchase will be contingent upon the development success and operational utilization.

25X1

25X1A

HANDLE VIA
CONTROL SYSTEM ONLY

25X1A

FILM PROCESSING/PRODUCTION:

NRP film processing facilities are located at Rochester, Westover AFB, Yokota AFB, Taiwan and Saigon. Occasionally, other DOD facilities are utilized, and in an emergency, many are available for use. Thus, ample processing/production capability is available for satellite, aircraft, and drone products.

ILLEGIB

A serious limitation on the ability to react quickly in a crisis situation is the time involved in carrying the film to a processing facility and thence to Washington for interpretation and evaluation. For example, satellite capsules are recovered in the Hawaii area. Under favorable conditions, approximately 34 hours are required to deliver the film to Rochester (via McGuire AFB), develop, produce minimum duplicates, and deliver to Washington. In an emergency, film could be delivered direct to Rochester, and the Photo Interpreters could begin reviewing it at Rochester as soon as it was developed. Using this technique, initial interpretation could commence approximately 16 hours after capsule recovery.

The NRO has considered establishing a national-level processing/production facility in the Hawaii area for quick-reaction handling of satellite products. The quickest possible means of handling

25X1

25X1 NRO

CORONA products would be to both process and interpret in the Hawaii area and transmit the analyses to Washington.

NRO

However, believing that national authorities will desire to view the product directly, the NRO has also considered modifications to this approach. One technique might be to process and minimum-duplicate in Hawaii (would require approximately eight hours after capsule recovery), as indicated above, and airlift the take to Washington in a special C-135 or C-141, equipped with exploitation equipment and carrying a team of photo interpreters. During the 8-9 hours flight to Washington, the photo interpreters could accomplish a reasonably comprehensive analysis of the critical targets covered.

The most promising approach (for the relatively near term) appears to be a combination of in-flight processing, limited duplication, and initial interpretation in a single aircraft. Research and

25X1A

HANDLE VIA
CONTROL SYSTEM ONLY

25X1A

25X1

25X1A

development is underway on the critical elements of an in-flight processor of acceptable quality. If these investigations prove out the feasibility of an all-viscous airborne processor, it is anticipated that development of two airborne processing/interpretation facilities (modified KC-135's) will be undertaken near the end of CY 66. This concept envisages the delivery of processed satellite film, along with initial interpretation, to Washington approximately nine hours after capsule recovery in the Hawaii area. When used for aircraft or drone photographic product, it would be possible to deliver processed film, along with initial interpretation, to Washington from any point on the world in approximately 20 hours or less.